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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/056,099	01/22/2002	Ronald Kaneshiro	10004086-1	9456

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EXAMINER

PETKOVSEK, DANIEL J

ART UNIT	PAPER NUMBER
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2874

DATE MAILED: 07/31/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/056,099

Applicant(s)

KANESHIRO ET AL.

Examiner

Daniel J Petkovsek

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-20 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 22 January 2002 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on ____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) ____.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). ____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

2. Claims 1, 2, 4, 5, 9, 11, 12, 14, 15 and 19 are rejected under 35 U.S.C. 102(e) as being anticipated by Boudreau et al. U.S.P. No. 6,574,399.

Boudreau et al. U.S.P. No. 6,574,399 teaches (ABS, Fig. 1, claim 1) a fiber optical engine (and method of using same) comprising: a optical component 8 having optics and a substrate, opto-electronic elements for converting between light and electronic signals connected and aligned with the optical component, an integrated circuit to control the device connected to the component, and an electrically conductive material disposed on the device to electrically couple the IC chip to the optical device. Regarding claims 2 and 12, the IC is inherently aligned for proper functionality. Regarding claims 4, 5, 9, 14, 15, and 19, conductive traces 12 and bumps exist for electrical connection and alignment.

3. Claims 1-5, 8, 9, 11-15, and 18-20 are rejected under 35 U.S.C. 102(e) as being anticipated by Ouchi U.S.P. No. 6,477,286.

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Ouchi U.S.P. No. 6,477,286 teaches (Figs. 3, 5, 10A, column 3 line 50 through column 4 line 50) a fiber optical engine (and method of using same) comprising: an optical device unit, an opto-electronic elements for converting between light and electronic signals being secured to the device and aligned, an integrated circuit for controlling the conversion elements, the IC being secured to the device, and a wiring substrate secured to the device for maintaining electrical connection. Regarding claims 2 and 12, the IC is inherently aligned for proper functionality. Regarding claims 4, 5, 14, and 15, conductive traces and bumps exist for electrical connection. Regarding claims 3, 9, 13, and 19, a mirror exists, as well as other components in the IC to monitor photosensitivity and feedback to ensure proper functionality of the system. Regarding claims 8 and 18, a thermally conductive plate 7 is used, in contact with the device. Regarding claim 20, a ceramic substrate is used.

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 6-8, 16-18, and 20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Boudreau et al. U.S.P. No. 6,574,399.

Boudreau et al. U.S.P. No. 6,574,399 teaches (ABS, Fig. 1, claim 1) a fiber optical engine (and method of using same) comprising: a optical component 8 having optics and a substrate, opto-electronic elements for converting between light and electronic signals connected and aligned with the optical component, an integrated circuit to control the device connected to the

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component, and an electrically conductive material disposed on the device to electrically couple the IC chip to the optical device. Boudreau '399 does not explicitly teach the dependent claim limitations listed.

Regarding claims 6, 7, 16, and 17, it is well known in the art to use heat-curable adhesive, to secure optical elements on integrated circuit devices. Although not explicitly disclosed by Boudreau et al. '399, the use of this adhesive in different parts of the integrated circuit in order to maintain the connection and functionality for the entire device is an obvious modification to a person having ordinary skill in the art at the time the invention was made. The electrical wiring substrate is not explicitly taught to be longer than the optical element, however this limitation is a non-critical device limitation in view of Boudreau et al. '399. Regarding claims 8, 18, and 20, the uses of these well known elements in contact with the disclosed integrated optical device would have been an obvious modification to a person having ordinary skill in the art at the time the invention was made. Thermal and circuit substrates are well known in IC fabrication to improve connectivity and heat-dissipation.

6. Claims 6, 7, 10, 16, and 17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ouchi U.S.P. No. 6,477,286.

Ouchi U.S.P. No. 6,477,286 teaches (Figs. 3, 5, 10A, column 3 line 50 through column 4 line 50) a fiber optical engine (and method of using same) comprising: an optical device unit, an opto-electronic elements for converting between light and electronic signals being secured to the device and aligned, an integrated circuit for controlling the conversion elements, the IC being

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secured to the device, and a wiring substrate secured to the device for maintaining electrical connection. Ouchi '286 does not explicitly teach the dependent limitations of claims listed.

Regarding claims 6, 7, 16, and 17, Ouchi '286 teaches the use of heat-curable adhesive, but not in the manner as claimed. The use of this adhesive in different parts of the integrated circuit in order to maintain the connection and functionality for the entire device is an obvious modification to a person having ordinary skill in the art at the time the invention was made. The electrical wiring substrate is not explicitly taught to be longer than the optical element, however this limitation is a non-critical device limitation in view of Ouchi '286. Regarding claim 10, testing of the wafer material shown by Ouchi '286, although not explicitly disclosed, would have been an obvious result of the device to ensure proper functionality.

Inventorship

7. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

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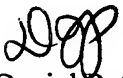
Conclusion

8. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure, with respect to the state of the art of integrated circuits using optical and electrical elements: PTO-892 form references C-K.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Daniel J Petkovsek whose telephone number is (703) 305-6919. The examiner can normally be reached on M-F 8:30-5:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Rodney Bovernick can be reached on (703) 308-4819. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 872-9318 for regular communications and (703) 872-9319 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 872-9321.


Daniel Petkovsek
July 13, 2003


AKM ENAYET ULLAH
PRIMARY EXAMINER